

## **WHAT IS CLAIMED IS:**

1. A cell switching system in a communication system using an asynchronous transfer mode (ATM), comprising:
  - a first converter configured to extract AAL2 type common part sublayer (CPS) packets by demultiplexing a received AAL2 type ATM cell, and generate an AAL5 type ATM cell in accordance with a first transforming information for the extracted AAL2 type CPS packets; and
  - a second converter coupled to the first converter and configured to generate an AAL2 CPS packet from AAL5 type ATM cell in accordance with a second transforming information and generate an AAL2 ATM cell by multiplexing the generated AAL2 CPS packet with other AAL2 CPS packets.
2. The cell switching system of claim 1, wherein the first transforming information comprises virtual path/virtual channel (VP/VC) and channel identifier (CID) information, and wherein the second transforming information comprises VP/VC information.
3. The cell switching system of claim 1, further comprising:
  - a first table comprising the first transforming information to map respective input VP/VC and CID of AAL2 type CPS packets extracted from the first converter to corresponding VP/VC of AAL5 type ATM cells; and

a second table comprising the second transforming information to map respective input VP/VC of the AAL5 type ATM cells to corresponding VP/VC and CID of AAL2 type CPS packets.

4. The cell switching system of claim 1, wherein the second converter receives the AAL5 type ATM cell from one of the first converter and an external source.

5. The cell switching system of claim 4, wherein the external source is an ATM cell multiplexer/demultiplexer.

6. The cell switching system of claim 1, further comprising:

a third converter configured to extract AAL2 type CPS packets by demultiplexing a received AAL2 type ATM cell, and generate an AAL5 type ATM cell in accordance with the first transforming information for the extracted AAL2 type CPS packets; and

a fourth converter configured to generate an AAL2 CPS packet from the AAL5 type ATM cell in accordance with the second transforming information and generate an AAL2 ATM cell by multiplexing the generated AAL2 CPS packet with other AAL2 CPS packets.

7. A cell switching system in a communication system using an asynchronous transfer mode (ATM), comprising:

a first converter configured to separate an inputted ATM cell into AAL2 type common part sublayer (CPS) packets and first virtual path/virtual channel (VP/VC) and first channel identifier (CID), generate AAL5 type ATM cells by allocating a second VP/VC to the separated AAL2 CPS packets, and having a first table provided with reference values for allocating the second VP/VC; and

a second converter configured to separate one of the generated and externally-inputted AAL5 type ATM cell into third VP/VC and data, generate an AAL2 CPS packet by allocating a fourth VP/VC and second CID to the separated data, generate an AAL2 ATM cell by multiplexing a plurality of AAL2 CPS packets, and having a second table provided with reference values for allocating the fourth VP/VC and second CID to the separated data.

8. The cell switching system according to claim 7, wherein the first table maps the respective first VP/VC and first CID of AAL2 type CPS packets extracted from the first converter to second VP/VC.

9. The cell switching system according to claim 7, wherein the second table maps the respective third VP/VC of the AAL5 type ATM cells to fourth VP/VC and second CID.

10. The cell switching system according to claim 7, wherein the first converter comprises:

an AAL2 receiving unit configured to receive the inputted ATM cell; and

an AAL5 transmitting unit, coupled to the AAL2 receiving unit and the first table, and configured to output the generated AAL5 type ATM cells.

11. The cell switching system according to claim 7, wherein the second converter comprises:

an AAL5 receiving unit coupled to the second table and configured to separate the AAL5 type ATM cell, the third VP/VC and data and allocate the fourth VP/VC and the second CID to the separated data; and

an AAL2 transmitting unit, coupled to the AAL5 receiving unit and configured to generate the AAL2 CPS packet.

12. A cell switching system in a communication system using an asynchronous transfer mode (ATM), comprising:

a first converter configured to separate an inputted ATM cell into AAL2 type common part sublayer (CPS) packets and first virtual path/virtual channel (VP/VC) and first channel identifier (CID), generate AAL5 type ATM cells by allocating second VP/VC to the separated AAL2 type CPS packets, and having a first table provided with first reference values for allocating the second VP/VC;

a second converter configured to separate one of the generated and externally-inputted AAL5 type ATM cell into third VP/VC and data, generate an AAL2 CPS packet by allocating fourth VP/VC and second CID to the separated data, generate an AAL2 ATM cell

by multiplexing a plurality of AAL2 CPS packets, and having a second table provided with second reference values for allocating fourth VP/VC and second CID to the separated data;

a third converter configured to separate the generated or externally-inputted AAL5 ATM cell into fifth VP/VC and data, generate an AAL2 CPS packet by allocating sixth VP/VC and third CID to the separated data, generate an AAL2 ATM cell by multiplexing AAL2 CPS packets generated by each user, and having a third table provided with third reference values for allocating the sixth VP/VC and the third CID to the separated data wherein the third reference values are attained by switching input/output from the second table; and

a fourth converter configured to separate an inputted ATM cell into AAL2 type CPS packets and seventh VP/VC and fourth CID, generate AAL5 type ATM cells by allocating eighth VP/VC to the separated AAL2 CPS packets, provide the second and third converters with the AAL5 type ATM cells or outputting the AAL5 type ATM cells to an outside port, and having a fourth table provided with fourth reference values for allocating the eighth VP/VC, wherein the fourth reference values are attained by switching the input/output from the second table.

13. The cell switching system according to claim 12, wherein the first and third table maps respective VP/VC and CID of the separated AAL2 CPS packets to VP/VC of AAL5 type ATM cells.

14. The cell switching system according to claim 12, wherein the second and fourth tables map respective VP/VC of the AAL5 ATM cells correspond to VP/VC and CID of AAL2 type CPS packets.

15. A cell switching system in a communication system using an asynchronous transfer mode (ATM), comprising:

a first converter configured to separate an inputted ATM cell into AAL2 type common part sublayer (CPS) packets and first virtual path/virtual channel (VP/VC) and first channel identifier (CID), generate AAL5 type ATM cells by allocating second VP/VC to the separated AAL2 type CPS packets, and having a first table provided with reference values for allocating the second VP/VC;

a second converter configured to separate or of the generated and externally-inputted AAL5 type ATM cell into third VP/VC and data, generate an AAL2 CPS packet by allocating fourth VP/VC and second CID to the separated data, generate an AAL2 ATM cell by multiplexing a plurality of AAL2 CPS packets, and having a second table provided with reference values for allocating the fourth VP/VC and second CID to the separated data; and

a multiplexer/demultiplexer configured to multiplex AAL2 ATM cells or AAL5 ATM cells inputted through corresponding ports so as to provide the first and second converters with the multiplexed cells and to demultiplex the generated AAL5 ATM cells or AAL2 ATM cells so as to output the demultiplexed cells to the corresponding ports.

16. The cell switching system according to claim 15, wherein the first table maps respective first VP/VC and first CID of the separated AAL2 CPS packets to second VP/VC.

17. The cell switching system according to claim 15, wherein the second table maps the respective third VP/VC of the AAL5 type ATM cells to fourth VP/VC and second CID.

18. A cell switching system in a communication system using an asynchronous transfer mode (ATM), comprising:

a first converter configured to separate an inputted ATM cell into AAL2 type common part sublayer (CPS) packets and first virtual path/virtual channel (VP/VC) and first channel identifier (CID), generate AAL5 type ATM cells by allocating a second VP/VC to the separated AAL2 CPS packets, and having a first table provided with first reference values for allocating the second VP/VC;

a second converter configured to separate one of the generated and externally-inputted AAL5 type ATM cell into third VP/VC and data, generate an AAL2 CPS packet by allocating fourth VP/VC and second CID to the separated data, generate an AAL2 ATM cell by multiplexing a plurality of AAL2 CPS packets, and having a second table provided with second reference values for allocating the fourth VP/VC and second CID to the separated data;

a third converter configured to separate the generated or externally-inputted AAL5 type ATM cell into fifth VP/VC and data, generate an AAL2 CPS packet by allocating sixth VP/VC and third CID to the separated data, generate an AAL2 ATM cell by multiplexing

AAL2 CPS packets generated by each user, and having a third table provided with third reference values for allocating the sixth VP/VC and the third CID to the separated data wherein the third reference values are attained by switching input/output from the second table;

a fourth converter configured to separate an inputted ATM cell into AAL2 type CPS packets and seventh VP/VC and fourth CID, generate AAL5 type ATM cells by allocating eighth VP/VC and CID to the separated AAL2 CPS packets, provide the second and third converters with the AAL5 type ATM cells or outputting the AAL5 type ATM cells to an outside port, and having a fourth table provided with fourth reference values for allocating the eighth VP/VC wherein the fourth reference values are attained by switching the input/output from the second table; and

a multiplexer/demultiplexer configured to multiplex at least one of AAL2 ATM cells and AAL5 ATM cells inputted through corresponding ports so as to provide the converters with the multiplexed cells and to demultiplex the generated AAL5 ATM cells or AAL2 ATM cells so as to output the demultiplexed cells to the corresponding ports.

19. The cell switching system according to claim 18, wherein the first table maps respective VP/VC and CID of the separated AAL2 CPS packets to VP/VC of AAL5 type ATM cells.

20. The cell switching system according to claim 18, wherein the second table maps respective VP/VC of the AAL5 type ATM cells to VP/VC and CID of AAL2 type CPS packets.

21. A method for switching cells in a communication system using an asynchronous transfer mode (ATM), comprising:

extracting a first AAL2 type common part sublayer (CPS) packets by demultiplexing a first AAL2 type ATM cell;

generating an AAL5 type ATM cell in accordance with virtual path/virtual channel (VP/VC) and channel identifier (CID) transforming information for the extracted AAL2 CPS packets; and

generating a second AAL2 CPS packet from the AAL5 type ATM cell in accordance with the VP/VC transforming information and generating a second AAL2 type ATM cell by multiplexing the second AAL2 CPS packet with at least one other AAL2 CPS packet.

22. The method of claim 21, further comprising demultiplexing the generated AAL5 type ATM cell and second AAL2 type ATM cell to perform the switching.

23. The method of claim 21, wherein respective VP/VC and CID of the first AAL2 CPS packets correspond to VP/VC of the AAL5 type ATM cell.

24. The method of claim 21, wherein respective VP/VC of the AAL5 ATM cells correspond to VP/VC and CID of the second AAL2 CPS packet.

25. The method of claim 21, wherein the first AAL2 type ATM cell is received from an ATM cell multiplexer/demultiplexer.

26. A method for switching cells in a communication system using an asynchronous transfer mode (ATM), comprising:

separating an inputted ATM cell into at least one first AAL2 type common part sublayer (CPS) packets and first virtual path/virtual channel (VP/VC) and first channel identifier (CID);

at least one of generating AAL5 type ATM cells by allocating second VP/VC to the separated AAL2 CPS packets instead of the first VP/VC and first CID and receiving an external AAL5 type ATM cell;

separating the AAL5 type ATM cell into second VP/VC and data; and

generating a second AAL2 CPS packet by allocating third VP/VC and second CID to the separated data instead of the second VP/VC, and generating an AAL2 ATM cell by multiplexing a plurality of AAL2 CPS packets.

27. The method of claim 26, further comprising demultiplexing the generated AAL5 type ATM cell and AAL2 ATM cell.

28. A method for switching cells in a communication system using an asynchronous transfer mode (ATM), comprising:

receiving an AAL5 type ATM cell;  
separating the AAL5 type ATM cell into initial VP/VC and data; and  
generating an AAL2 CPS packet by allocating new VP/VC and CID to the  
separated data instead of the initial VP/VC, and generating an AAL2 ATM cell by multiplexing  
a plurality of AAL2 CPS packets.

29. The method of claim 28, wherein the AAL5 type ATM cell is received from one  
of an AAL2/AAL5 converter and an external source.

30. The method of claim 29, wherein the external source is an ATM cell  
multiplexer/demultiplexer.